# Contents of Volume 19

NUMBER 1 FEBRUARY 1990

**From the Editor** 1

**A Low Dilution Fusion Technique for the Analysis of Geological Samples. 1—Method and Trace Element Analysis** 3
J. EASTELL AND J. P. WILLIS

**EXAFS Measurement with Laboratory Equipment: Problems and their Countermeasures** 15
T. OKAMOTO, S. YAMASHITA, T. YAMAGUCHI AND H. WAKITA

**L$\alpha$/L$\beta$ and L$\alpha$/L$\gamma$ X-Ray Intensity Ratios for Elements in the Range $Z = 55$–80** 23
C. V. RAGHAVAIAH, N. VENKATESWARA RAO, S. BHULOKA REDDY, G. SATYANARAYANA, G. SREE KRISHNA MURTY, M. V. S. CHANDRASEKHAR RAO AND D. L. SASTRY

**Study of K-Absorption Edge of Selenium in the Glassy Semiconducting $Se_{100-x}In_x$ System** 27
A. KUMAR, M. HUSAIN, S. SWARUP, A. N. NIGAM AND A. KUMAR

**Determination of Sample Thickness via Scattered Radiation in X-Ray Fluorescence Spectrometry with Filtered Continuum Excitation** 29
M. FATIMA ARAUJO, P. VAN ESPEN AND R. VAN GRIEKEN

*Short Communication*
**Diffraction of a High-Energy Characteristic X-Ray by a Perfect Crystal** 35
M. A. SHORT AND M. R. FALLON

NUMBER 2 APRIL 1990

**Papers from the Australian X-Ray Analytical Association (AXAA-88) Conference, Perth, Western Australia, 14–19 August 1988**

**Guest Editor: Brian O'Connor**

**From the Editor** 41

**Guest Editorial** 43

**New Horizons in X-Ray Fluorescence Analysis** 45
J. V. GILFRICH

**Recent Results Using Synchrotron Radiation for Energy-Dispersive X-Ray Fluorescence Analysis** 53
J. M. JAKLEVIC, R. D. GIAUQUE AND A. C. THOMPSON

**Holes in the Background in XRS** 59
P. G. SELF, K. NORRISH, A. R. MILNES, J. GRAHAM AND B. ROBINSON

**Determination of Forms of Sulphur in Plant Material by X-Ray Fluorescence Spectrometry** 63
A. PINKERTON, K. NORRISH AND P. J. RANDALL

**XRS Analysis of Sulphides by Fusion Methods** 67
K. NORRISH AND G. M. THOMPSON

**Characterization of II–VI Semiconductor Materials Using Surface Analytical Techniques** 73
M. H. KIBEL

**Characterization of II–VI Semiconductor Compounds Grown by Metallo-organic Chemical Vapour Deposition** 79
G. I. CHRISTIANSZ, S. GEORGIOU, M. S. KWIETNIAK, G. N. PAIN, B. USHER, T. WARMINSKI, S. R. GLANVILL, C. J. ROSSOUW, A. W. STEVENSON, S. W. WILKINS AND L. WIELUNSKI

**XRF Procedures for Analysis of Standard Reference Materials** 85
GUANG YI TAO, ZHONG YI ZHANG AND AN JI

NUMBER 3 JUNE 1990

**From the Editor** 91

**Absolute X-Ray Fluorescence Method for the Determination of Metal Thicknesses by Intensity Ratio Measurements** 93
C. VAZQUEZ, D. V. DE LEYT AND J. A. RIVEROS

**Two Simple, Practical Correction Procedures for Spectra Processing in Energy-Dispersive X-Ray Spectrometry** 97
F. EGGERT

**X-Ray Emission Studies on the $(La_{1-x}Ba_x)_2CuO_{4\pm y}$ System** 105
B. S. ACHARYA, RAJEEV AND J. MURALIDHAR

**A PIXE Data Reduction Code Utilizing an IBM PC** 113
A. B. HALLAK, M. M. AL-KOFAHI AND H. A. AL-JUWAIR

**Versatile and Accurate Trace Element Determinations in Iron-Rich and Other Geological Samples Using X-Ray Fluorescence Analysis** 117
I. W. CROUDACE AND J. M. GILLIGAN

**Coordination State Research in Glasses by XRF** 125
X. LI

**Use of the DuMond Arrangement in Analytical X-Ray Spectrometers** 129
B. S. VERMAN AND I. V. SERIKOV

**Analysis of NBS and Other Reference Materials for Testing the Validity of the $\alpha$-Parameter Correction Method in PIXE** 133
P. ALOUPOGIANNIS, G. ROBAYE, G. WEBER, J. M. DELBROUCK-HABARU AND I. ROELANDTS

**Use of Theoretical Accurate Binary Influence Coefficients with Tertian's Equation in X-Ray Fluorescence Analysis of Silicate Rocks in Borax Glass Beads** 141
L. M. MUIA AND R. VAN GRIEKEN

**Calculation of X-Ray Fluorescence Intensities from Bulk and Multilayer Samples** 145
D. K. G. de BOER

**K X-Ray Fluorescence Cross-Section Measurements of Some Elements in the Energy Range 8–47 keV** 155
S. SINGH, R. RANI, D. MEHTA, N. SINGH, P. C. MANGAL AND P. N. TREHAN

*Short Communication*

**Line Identification and Other Simple Wavelength-Dispersive X-Ray Spectrometric Calculations Using a Pocket Calculator** 159
I. TÖRÖK

NUMBER 4 AUGUST 1990

**From the Editor** 165

**Obituary** 167

**Some Considerations on the Use of Lα Series of Transition Metals in Electron Probe Microanalysis: the Example of Zinc Minerals** 169
M. FIALIN

**Study of Mean Excitation Energy and K-Shell Effect for Electron Probe Microanalysis** 173
H. BRIZUELA AND J. A. RIVEROS

**Apparatus for Low-Energy X-Ray Fluorescence using an Al K X-Ray Source and an Si(Li) Detector** 177
R. G. MUSKET AND S. J. HOLMES

**X-Ray Fluorescence Analysis for Oxygen on and in Materials** 185
R. G. MUSKET

**Fundamental Coefficient Method Applied to a Quasi-Monochromatic Excitation** 193
N. BROLL

**Mean Depth of X-Ray Production by Electron Beams in Thick Targets** 197
M. GABER AND A. A. ABOU EL-KHIER

**Glass Disk Fusion Method for the X-Ray Fluorescence Analysis of Rocks and Silicates** 203
M. ALVAREZ

NUMBER 5 OCTOBER 1990

**From the Editor** 209

**Quantitative XRF Analysis of Surface Layers: Procedure for the Determination of Thickness and Composition** 211
V. RÖSSIGER AND H.-J. THOMAS

**Calibration of Analytical Spectrometers and Metrological Aims of Quantitative Analysis** 219
Y. B. KOTLYAROV

**Rapid Analysis of Coal Fly Ash by X-Ray Fluorescence Spectrometry** 227
M. BETTINELLI AND P. TAINA

**$L_{III}$ Subshell Intensity Ratios of Pb, Th and U** 233
M. TAN, Y. ŞAHIN AND A. ŞAPLAKOĞLU

**A Matrix Effect Correction Algorithm for X-Ray Fluorescence Analysis of Steels** 237
T. N. GUNICHEVA, A. L. FINKELSHTEIN AND V. P. AFONIN

**Structural Studies of Glassy Semiconducting $Se_{80-x}Te_{20}In_x$ Alloys** 243
A. KUMAR, M. HUSAIN, S. SWARUP, A. N. NIGAM AND A. KUMAR

NUMBER 6 DECEMBER 1990

**Structure of Electrodeposited Films of Cobalt and Nickel: Fourier Analysis of the EXAFS of the X-Ray K-Absorption Edges** 251
B. SINHA AND A. N. NIGAM

**Spectral Distribution of Backscattered Electrons: Application to Electron Probe Microanalysis** 261
M. DEL GIORGIO, J. TRINCAVELLI AND J. A. RIVEROS

**Electron Backscattering Coefficient for the 'Film–Substrate' Solid System** 269
S. V. KAZAKOV, S. G. KONNIKOV AND V. V. TRETYAKOV

**X-Ray Depth Distribution Function, $\phi(\rho z)$, for Thin Spheres** 275
N. A. ZREIBA AND T. F. KELLY

**Determination of Potassium and Calcium in Milk Powder by Energy-Dispersive X-Ray Fluorescence Spectrometry** 285
M. ALVAREZ AND V. MAZO-GRAY

**Some Features of the Lachance–Traill Equation** 289
A. KUCZUMOW AND J. A. HELSEN

**Author Index** 295